

RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Rat Cell Lineage Identification

Cat. no. 330231 PARN-508ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT ² Profiler PCR Array, Format A	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad® models iCycler®, iQ™ 5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®; Takara TP-800
RT ² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT ² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT ² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT ² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT ² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT ² Profiler PCR Array, Format H	Fluidigm® BioMark™



Sample & Assay Technologies

Description

The Rat Cell Lineage Identification RT² Profiler PCR Array profiles the expression of 84 key genes for cellular differentiation. During embryonic development, pluripotent stem cells differentiate into three germ layers: ectoderm, mesoderm and endoderm. These germ layers eventually differentiate into multipotent stem cells (progenitors), which progress into terminally differentiated cells. These developmental processes require tightly regulated and carefully timed gene expression changes. Analysis of these genes can suggest the identity of an intermediately or terminally differentiated cell, and/or the mechanism of a studied differentiation process. This array contains gene markers for specific cell types throughout cellular lineage progression, including pluripotent stem cells, progenitor cells from each of the three germ layers, and terminally differentiated cells. Using real-time PCR, your research study can easily and reliably analyze the expression of a focused panel of cellular lineage progression markers with this array.

For further details, consult the *RT² Profiler PCR Array Handbook*.

Shipping and storage

RT² Profiler PCR Arrays in formats A, C, D, E, F, and G are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products. RT² Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

For long term storage, keep plates at –20°C.

Note: Ensure that you have the correct RT² Profiler PCR Array format for your real-time cycler (see table above).

Note: Open the package and store the products appropriately immediately on receipt.

Array layout (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	Acan	Alb	ApoH	Aqp1	Bmp4	Cav3	Ccr5	Cd34	Cd3e	Cd79a	Chat	Col10a1
B	Comp	Cpa1	Ctsk	Dcn	Dcx	Dnmt3b	Dpp4	Eno1	Fabp7	Fgf5	Foxa1	Foxd3
C	Foxg1	G6pc	Gad1	Gad2	Galc	Gata1	Gata2	Gata6	Gbx2	Gdf3	Gfap	Hand1
D	Hand2	Hes5	Hnf4a	Ibsp	Igf2	Ins2	Itgb4	Krt10	Krt14	Krt19	Lefty1	Map3k12
E	Miox	Mixl1	Msln	Myh11	Myh7	Myl3	Myod1	Nanog	Neurod1	Neurog2	Nlx2-2	Nppa
F	Olig2	Otx2	Pdgfra	Podxl	Pou4f2	Pou5f1	Prom1	Picra	Rcvm	Runx1	Sftpb	Sftpd
G	Slc17a6	Slc17a7	Slc2a2	Slc32a1	Smln	Sox17	Sox2	Sox7	T	Tat	Tyr	Zic1
H	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.54503	NM_022190	Acan	Aggrecan
A02	Rn.202968	NM_134326	Alb	Albumin
A03	Rn.1824	NM_001009626	ApoH	Apolipoprotein H (beta-2-glycoprotein I)
A04	Rn.1618	NM_012778	Aqp1	Aquaporin 1
A05	Rn.10318	NM_012827	Bmp4	Bone morphogenetic protein 4
A06	Rn.98191	NM_019155	Cav3	Caveolin 3
A07	Rn.10736	NM_053960	Ccr5	Chemokine (C-C motif) receptor 5
A08	Rn.219720	NM_001107202	Cd34	CD34 molecule
A09	Rn.96221	NM_001108140	Cd3e	CD3 molecule, epsilon
A10	Rn.178258	XM_001060872	Cd79a	Cd79a molecule, immunoglobulin-associated alpha
A11	Rn.104846	XM_224626	Chat	Choline acetyltransferase
A12	Rn.217522	XM_001053056	Col10a1	Collagen, type X, alpha 1
B01	Rn.10343	NM_012834	Comp	Cartilage oligomeric matrix protein
B02	Rn.9576	NM_016998	Cpa1	Carboxypeptidase A1
B03	Rn.5598	NM_031560	Ctsk	Cathepsin K
B04	Rn.106103	NM_024129	Dcn	Decorin
B05	Rn.121471	NM_053379	Dcx	Doublecortin
B06	Rn.117353	NM_001003959	Dnmt3b	DNA (cytosine-5)-methyltransferase 3 beta
B07	Rn.91364	NM_012789	Dpp4	Dipeptidylpeptidase 4
B08	Rn.4236	NM_012554	Eno1	Enolase 1, (alpha)
B09	Rn.10014	NM_030832	Fabp7	Fatty acid binding protein 7, brain
B10	Rn.44445	NM_022211	Fgf5	Fibroblast growth factor 5
B11	Rn.10470	NM_012742	Foxa1	Forkhead box A1
B12	Rn.92964	XM_575873	Foxd3	Forkhead box D3
C01	Rn.9864	NM_012560	Foxg1	Forkhead box G1
C02	Rn.10992	NM_013098	G6pc	Glucose-6-phosphatase, catalytic subunit
C03	Rn.91245	NM_017007	Gad1	Glutamate decarboxylase 1
C04	Rn.29951	NM_012563	Gad2	Glutamate decarboxylase 2
C05	Rn.211758	NM_001005888	Galc	Galactosylceramidase
C06	Rn.10024	NM_012764	Gata1	GATA binding protein 1
C07	Rn.34322	NM_033442	Gata2	GATA binding protein 2
C08	Rn.8701	NM_019185	Gata6	GATA binding protein 6
C09	Rn.92363	NM_053708	Gbx2	Gastrulation brain homeobox 2
C10	Rn.202592	NM_001109671	Gdf3	Growth differentiation factor 3
C11	Rn.91512	NM_017009	Gfap	Glial fibrillary acidic protein
C12	Rn.39340	NM_021592	Hand1	Heart and neural crest derivatives expressed 1
D01	Rn.41057	NM_022696	Hand2	Heart and neural crest derivatives expressed 2
D02	Rn.22422	NM_024383	Hes5	Hairy and enhancer of split 5 (Drosophila)
D03	Rn.44442	NM_022180	Hnf4a	Hepatocyte nuclear factor 4, alpha
D04	Rn.9721	NM_012587	Ibsp	Integrin-binding sialoprotein
D05	Rn.118681	NM_031511	Igf2	Insulin-like growth factor 2
D06	Rn.989	NM_019130	Ins2	Insulin 2
D07	Rn.198908	NM_013180	Itgb4	Integrin, beta 4
D08	Rn.125065	NM_001008804	Krt10	Keratin 10
D09	Rn.153972	NM_001008751	Krt14	Keratin 14

Position	UniGene	GenBank	Symbol	Description
D10	Rn.9359	NM_199498	Krt19	Keratin 19
D11	Rn.218667	NM_001109080	Lefty1	Left right determination factor 1
D12	Rn.146082	NM_013055	Map3k12	Mitogen activated protein kinase kinase kinase 12
E01	Rn.19959	NM_145771	Miox	Myo-inositol oxygenase
E02	Rn.218456	NM_001105979	Mixl1	Mix1 homeobox-like 1 (Xenopus laevis)
E03	Rn.18607	NM_031658	Msln	Mesothelin
E04	Rn.94969	XM_573030	Myh11	Myosin, heavy chain 11, smooth muscle
E05	Rn.202949	NM_017240	Myh7	Myosin, heavy chain 7, cardiac muscle, beta
E06	Rn.1955	NM_012606	Myl3	Myosin, light chain 3, alkali; ventricular, skeletal, slow
E07	Rn.9493	NM_176079	Myod1	Myogenic differentiation 1
E08	Rn.124668	NM_001100781	Nanog	Nanog homeobox
E09	Rn.44289	NM_019218	Neurod1	Neurogenic differentiation 1
E10	Rn.14910	XM_227716	Neurog2	Neurogenin 2
E11	Rn.32651	XM_345446	Nkx2-2	NK2 homeobox 2
E12	Rn.2004	NM_012612	Nppa	Natriuretic peptide precursor A
F01	Rn.22121	NM_001100557	Olig2	Oligodendrocyte lineage transcription factor 2
F02	Rn.35222	NM_001100566	Otx2	Orthodenticle homeobox 2
F03	Rn.55127	NM_012802	Pdgfra	Platelet derived growth factor receptor, alpha polypeptide
F04	Rn.162741	NM_138848	Podxl	Podocalyxin-like
F05	Rn.92413	NM_134355	Pou4f2	POU class 4 homeobox 2
F06	Rn.161748	NM_001009178	Pou5f1	POU class 5 homeobox 1
F07	Rn.144589	NM_021751	Prom1	Prominin 1
F08	Rn.92370	XM_001065627	Ptcr	Pre T-cell antigen receptor alpha
F09	Rn.38641	NM_080901	Rcvrn	Recoverin
F10	Rn.11201	NM_017325	Runx1	Runt-related transcription factor 1
F11	Rn.1952	NM_138842	Sftpb	Surfactant protein B
F12	Rn.11348	NM_012878	Sftpd	Surfactant protein D
G01	Rn.19372	NM_053427	Slc17a6	Solute carrier family 17 (sodium-dependent inorganic phosphate cotransporter), member 6
G02	Rn.10267	NM_053859	Slc17a7	Solute carrier family 17 (sodium-dependent inorganic phosphate cotransporter), member 7
G03	Rn.89295	NM_012879	Slc2a2	Solute carrier family 2 (facilitated glucose transporter), member 2
G04	Rn.10846	NM_031782	Slc32a1	Solute carrier family 32 (GABA vesicular transporter), member 1
G05	Rn.40766	NM_001013049	Smln	Smoothelin
G06	Rn.7884	NM_001107902	Sox17	SRY (sex determining region Y)-box 17
G07	Rn.219221	NM_001109181	Sox2	SRY (sex determining region Y)-box 2
G08	Rn.17732	NM_001106045	Sox7	SRY (sex determining region Y)-box 7
G09	Rn.218650	NM_001106209	T	T, brachyury homolog (mouse)
G10	Rn.9947	NM_012668	Tat	Tyrosine aminotransferase
G11	Rn.38928	NM_001107535	Tyr	Tyrosinase
G12	Rn.161923	NM_022677	Zic1	Zic family member 1 (odd-paired homolog, Drosophila)
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H06	N/A	U26919	RGDC	Rat Genomic DNA Contamination
H07	N/A	SA_00104	RTC	Reverse Transcription Control
H08	N/A	SA_00104	RTC	Reverse Transcription Control
H09	N/A	SA_00104	RTC	Reverse Transcription Control
H10	N/A	SA_00103	PPC	Positive PCR Control
H11	N/A	SA_00103	PPC	Positive PCR Control
H12	N/A	SA_00103	PPC	Positive PCR Control

Related products

For optimal performance, RT² Profiler PCR Arrays should be used together with the RT² First Strand Kit for cDNA synthesis and RT² SYBR[®] Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT ² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT ² SYBR Green qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with real-time cyclers that do not require a reference dye, including: Bio-Rad models CFX96, CFX384, DNA Engine Opticon 2; Bio-Rad/MJ Research Chromo4; Roche LightCycler 480 (96-well and 384-well); all other cyclers	330500
RT ² SYBR Green ROX™ qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Applied Biosystems models 5700, 7000, 7300, 7500 [Standard and FAST], 7700, 7900HT 96-well block [Standard and FAST] and 384-well block, StepOnePlus; Eppendorf Mastercycler ep realplex models 2, 2S, 4, 4S; Stratagene models Mx3000P, Mx3005P, Mx4000; Takara TP-800	330520
RT ² SYBR Green Fluor qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Bio-Rad models iCycler, iQ5, MyiQ, MyiQ2	330510

* Larger kit sizes available; please inquire.

RT² Profiler PCR Array products are intended for molecular biology applications. These products are not intended for the diagnosis, prevention, or treatment of a disease.

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